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# Amateur Radio

JOURNAL OF  
THE WIRELESS  
INSTITUTE OF  
AUSTRALIA

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# AMATEUR RADIO

Published by the Wireless Institute of Australia,  
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**EDITORIAL**

## Amateur Operator's Certificate of Proficiency

The aim of the majority of persons interested in Amateur Radio is to obtain an Amateur Operator's Certificate of Proficiency, be they young or old.

The fascination of Amateur Radio as a hobby is intense. Its appeal is stronger than the Lorient, and in some instances has the same disastrous results, therefore it behooves each of its adherents to temper the hobby with moderation. Make it your hobby not your MASTER.

The return and enjoyment you receive from being an Amateur is like all other hobbies. It depends on how much you put into it, not so much the financial side, but your interest and activities in its administrative and social affairs.

To obtain that coveted A.O.C.P. study is necessary, whether be it at home, one of the Institute's Divisional Classes, a local Radio Club, or a Commercial College.

In the case of group instruction you receive only a limited number of hours' tuition per week. During the period of the course you will realise that the total number of hours involved amount to so many days or weeks full time. Say to yourself, "Am I capable of absorbing and retaining the knowledge gained in this short space of time?" If the answer is NO, you should now realise that home study to supplement the group instruction is essential, therefore, set your course along these lines. Self discipline is a MUST if you expect to be successful.

The Ham fraternity is world wide and no matter where you travel the same cordial welcome awaits you.

A visit to any of the local Ham shacks will give you an insight into how the Amateur builds, utilises and maintains his station equipment. Your interesting visit may begin a very fine friendship, the help of which could guide your future progress along the "Road to Hamdom" and assist you to reach your goal—"The A.O.C.P. and Station Licence."

The examination for an Amateur Operator's Certificate of Proficiency is conducted by the Wireless Branch of the Postmaster General's Department on the second Tuesday of the months of January, April, July, and October of each year.

The examination is divided into three sections, viz.:-

- (1) The transmission and reception of morse code at a speed of 14 words per minute.
- (2) Regulations as laid down in the "Handbook for the Guidance of Amateur Station Licensees" issued by the P.M.G.'s Department.
- (3) Elementary knowledge of the theory and principles of transmission and reception of radio.

Since World War II the Amateur has been licensed to use new techniques in the fields of transmission and reception. This privilege calls for the use of equipment of a design entirely new to the average Amateur. The P.M.G.'s Department, therefore, has insisted that each new station licensee shall have a very elementary knowledge of these subjects. Likewise the syllabus of lectures for A.O.C.P. students has been enlarged to cover the following subjects:-

- (1) Frequency and Phase Modulation (n.b.f.m., p.m.).
- (2) Pulse Transmissions.
- (3) Single Sideband Reduced Carrier (A.S.T.C. or S.S.C.).

Morse code is something you cannot learn merely by reading a book. All reading will give you the basic idea of the code and how to learn it. To become proficient, it requires proper tuition and plenty of practice.

The most satisfactory system of teaching morse code is where the characters are sent at approximately 12 words per minute, but the spacing between characters is long. As the student progresses, the spacing is reduced until the practice messages or cypher groups are sent at the speed of 16 words per minute. During the period of tuition the student has learnt to recognise the rhythmic sound of the characters at 16 words per minute, therefore, as the spacing is reduced he has little difficulty in increasing his speed.

Summarising the foregoing, it is very evident that time must be made available each day for study purposes. Make this rule and adhere to it strictly. Nothing is harder to break than a habit, so create a habit of studying. Piecemeal attempts at study may eventually get you your "ticket"—but you may be too old to enjoy being a Ham for long.

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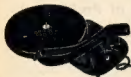
## THE CONTENTS . . .

How To Use Dry Rectifiers	3	National Field Day, 1951, Results	5
Television Made Easy, Part VIII.	7	DX Notes by VK4QL	7
Continued—Interference, and How the Hams Can Check It	4	Fifty Megacycles and Above	7
The SFO Aerial	5	Prediction Chart for June	7
Book Review—Phillips' "Radio & Television Manual"	5	Federal, QSL, and Divisional Notes	9

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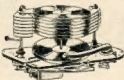
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# HOW TO USE DRY RECTIFIERS

BY HANS J. ALBRECHT,\* VK3AHH

Dry Rectifiers of all sizes and types are now available in surplus shops. It is often not realised what highly valuable components can thus be obtained at a reasonable price. And, on the other hand, rectifiers of this kind have advantages compared with the ordinary valve rectifiers. The following information should help the Ham who wants to use them in a proper way.

## HOW A DRY RECTIFIER WORKS

The fundamental principle as discovered by Braun, 1874, holds for all types of dry rectifiers, including crystal diodes which are, however, not dealt with in this article.

Some metals touching a semiconductor produce at the point of contact a resistance which depends upon the direction of the current flowing through that contact, i.e., a high resistance (about 100,000 ohms) exists in one direction and a low resistance (in the order of 5 ohms) in the other one. Such a contact can therefore be used for rectification of an alternating current.

There are quite a number of possible pairs of metals and semi-conductors, but the following two combinations are most commonly used—

- Iron (metal)—Selenium (semi-conductor).
- Copper (metal)—Cuprous Oxide (semi-conductor).

They are called selenium rectifiers and copper oxide rectifiers, respectively.

The principle is illustrated by Fig. 1 where M represents the metal, S the semi-conductor, and C the counter-electrode. Such a single unit is called a "cell."



Fig. 1.

## GENERAL CONSIDERATIONS

The actual rectifier consists of a number of cells connected in series. For any calculation regarding the use of those rectifiers always remember—

- Voltage to be rectified depends upon the number of cells connected in series.
- Current to be rectified depends upon the cross-section of the plates.

The maximum current depends upon the heat developed in the cell. Dry rectifiers work usually with better efficiency at higher temperatures, but as just mentioned, temperatures must not exceed the data given, so that a safe action and finally the life of the rectifier is not endangered. It is natural that a rectifier mounted in a free position, e.g., on the chassis, can stand more current than one inside the chassis.

The maximum current density is usually about 50 Ma. per square-centimeter, i.e. 320 Ma. per square-inch.

The temperature of a single cell should not exceed 50°C., i.e. 122°F.

In practice dry rectifiers can be overloaded and even short-circuited for a short period, for the increase in temperature follows only slowly.

The single selenium cell can rectify up to 15 volts, but breaks down at 16 volts. For that reason it is usual practice to operate a rectifier of such a kind with about 13 volts per cell. A copper oxide cell is capable to rectify no more than about 20 volts.

All dry rectifiers have an infinite lifetime if the maximum data given are not exceeded. The only thing which can happen after some thousand hours of operation is an increase in the internal resistance, but mostly there is no noticeable change in efficiency even after a much longer period.

Usually a selenium rectifier is safer regarding long periods of operation, while copper oxide rectifiers may produce some head-aches after some years. As an example, one particular selenium rectifier for 300 volts and 500 Ma. has been used by the writer since 1947 and still operates very well connected in series with a similar one for rectification of the transmitter's power supply (750 volts at 100 Ma.).

The efficiency of a dry rectifier depends upon the load as illustrated in Fig. 2.

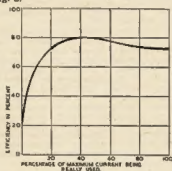


Fig. 2.

## PRACTICAL USE

You can use the dry rectifier wherever you would use an ordinary valve rectifier. The advantages of the former are—

- (1) Unlimited time of operation;
- (2) No filament requirements;
- (3) Good efficiency;
- (4) Insensibility to rough mechanical or electrical treatment.

One disadvantage must be mentioned. The ripple voltage is slightly larger than that of an ordinary valve rectifier because a very small current flows in the direction of high resistance. This can easily be overcome by a small increase in filter capacity or filter inductance.

It is always advisable to by-pass the dry rectifier for r.f., e.g. by a condenser of about 0.1 to 0.001  $\mu$ F. The condenser is not shown in the circuit diagrams.

Fig. 3 shows the simplest high-tension power supply without transformer. Half-wave rectification is obtained.

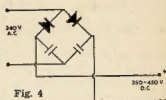


Fig. 4.

Fig. 4 gives the circuit of the voltage-doubler method using dry rectifiers. Again a transformer has not necessarily to be used; the filter circuit is not shown.

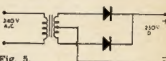


Fig. 5.

Fig. 5 shows the well-known full-wave rectification with dry rectifiers. The filter circuit is not shown.

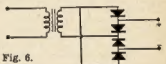


Fig. 6.

Fig. 6 shows dry rectifiers in bridge circuit used for charging batteries. The secondary winding of the transformer has to supply a voltage which is slightly higher than the d.c. voltage wanted.

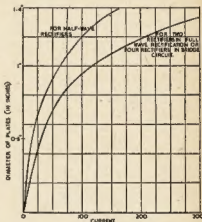


Fig. 7.

The graphs in Figs. 7 and 8 are based upon experience and may serve as a guide for anyone who intends to use dry rectifiers. They show the diameter of the plates (in inches) against the current.

(Continued on Page 5)

\* 10 Belgavia Avenue, Box Hill, Vic.

# TELEVISION MADE EASY

Part viii. Continued—

## Interference, and How the Hams Can Check It

BY KEN WALL† AND JOHN JARMAN,\* VK3ADA

Awakening from our day-dream, we now begin to wonder why this subject should even concern a VK, when we have no television service in this country.

Now this is just where we have the advantage. Prevention is better than cure and the time that elapses before the opening of Australia's first television station will give the Ham an ideal opportunity to not only "smarten up" his own transmitter, but also help to eliminate other forms of interference in his location. This will be a long job, and the time to start, believe it or otherwise, is right now!

But what can be done at this stage? How can one even tell whether his transmitter will cause interference? Now the ideal test would be to build a small television receiver and install it complete with aerial system close to the Ham shack. The circuits and building constructions for such receivers are published in some magazines, and probably many readers have already attempted building them. Although this scheme is very educational, however, we appreciate that it's beyond the means of most Hams, so this simpler scheme is suggested:

Our aim is to eliminate spurious emissions, on frequencies within the television band, viz., 180-204 Mc. Suppose we build, borrow, or otherwise acquire a v.h.f. receiver to cover this band, or at least a substantial portion thereof. If our rig is giving out signals in this band, it should surely detect them. With our test receiver installed close to the Ham shack, set at maximum sensitivity, and using the best available aerial system, an assistant is now engaged to carefully tune this receiver over its entire range, while test transmissions are made on our rig.

Admittedly, this test may not be completely infallible, since there are some emissions which will affect a television receiver, but which may not produce any audible output in our test receiver. This test will, however, show up the worst part of the trouble and in any case, if the rig under test produces an audible signal, it's a sure bet that it will also cause t.v.i. and the precautions taken to eliminate the emissions causing this audible output will usually also eliminate those which the test receiver cannot detect. Using this same receiver, we can now test each domestic electrical appliance in the same way, not forgetting the car or motor cycle.

Finally comes the question of other interference in the locality. Listening watches should be kept regularly and all audible interference carefully tabulated, noting for each noise the time

of day, frequencies where heard, repetition frequency (where applicable) and if possible, a description of the nature of the sound.

Note, by the way, that this test can be performed by any reader even if he is not a licensed Ham, since it involves listening only and no transmission.

The actual location of each source of interference may involve quite a lot of inquiries, and general investigation around the district. True enough, the Ham has no authority to forbid people to use interfering appliances, but is it any offence to politely remind them that they have appliances needing repair. A little tactful explanation will bring the co-operation of a surprising majority, and the remainder will change their tune in their own interests when television is established.

A directional aerial system will naturally help in locating these sources of interference, and some enthusiastic readers may even be contemplating using portable v.h.f. receivers.

No inquiries should be made, however, until the same interference has been logged for several days. From the information obtained, an attempt should first be made to predict what type of device is responsible and the probable owner contacted. This should be done while the interference is in progress, and the owner requested to temporarily switch the appliance off, or alternatively, notify by telephone when it is switched off. A careful record should be kept of all sources of interference in the locality, preferably on a sketch map, for future reference.

So much for locating the interference. How can it be corrected? Well, as for electrical appliances, different devices require different treatment, and are best dealt with by a licensed electrician, who should be familiar with the appropriate methods, in co-operation with the Ham who will check this electrician's results, with his v.h.f. receiver.

We are chiefly concerned, however, with the elimination of spurious emissions from our own transmitter. Now this is largely a matter of individual experiment, but the following hints may be helpful.

First of all ascertain whether the emissions are harmonics or parasites, by noting their frequencies. If harmonics, follow the sequence to find out where they are being generated.

● Disconnect the plate voltage from the output stage. If the same emission still persists, go back stage by stage, until the offending circuit is found. Subsequently, the offending component can be isolated.

● On the other hand, if the interference disappears, when the output stage is made inoperative, disconnect the aerial and tune up on a dummy load. If the emission disappears, the aerial

system must be dealt with, and suitable stubs in the feed line will often do the trick.

● If the emission persists, try shielding the dummy load.

Next look for other "channels" for radiation. Using a suitable detector, test for r.f. on the power lines, h.t. leads, panel leads, etc. Remember around 200 Mc. even a very short lead makes an effective radiator.

It should be noted that harmonics can not always be completely eliminated, but they must be sufficiently attenuated to prevent t.v.i.

Now parasites, on the other hand, can be eliminated completely, and their causes can usually be traced if each stage be tested as follows:

1. Remove plate power from all stages and remove filament power from all except the stage being tested.
2. Temporarily apply plate voltage to this stage, having first increased the negative bias for safety, if necessary.
3. Test for parasites by either grid current, a neon-bulb indicator (applied to each terminal of valve), or abnormal plate current (compared with data sheets).

Beware also of cases where spurious oscillations momentarily occur only when transmitter is keyed or modulated. The shape of keying impulses requires close attention. Each dot or dash (if graphed) should have a sloping leading and trailing edge, with a reasonably rounded top.

In all cases, however, the actual cure for the trouble will be a matter of individual experiment, different transmitters requiring different treatment. Many rigs will require complete rebuilding, and a certain quality which has hitherto been a feature of most experimental transmitters, namely, accessibility, will often have to be sacrificed. In other words, it is seldom possible to build a transmitter that won't cause t.v.i., but still keep its components accessible for modification, as we like to do.

Disheartening as this sounds, however, it is purely a sign of progress and will probably result in the production of much better quality Ham transmitters, just like the time when our "fore-runners" had to "dice" their robust spark transmitters for more precise equipment.

Some valuable hints on prevention of t.v.i. should be available from our American colleagues and here's where our DX enthusiasts can help. Those who obtain any useful tips on the subject should arrange with the Technical Editor of this magazine to have them published.

We see, therefore, that the prevention of t.v.i. is not just a matter of individual care, but demands a coordinated effort, necessitating the utmost co-operation between Hams themselves, and mutual understanding between Hams and the general public.

It should now be apparent why so much theory was covered in the series, before the actual subject of interference was dealt with. In short, one cannot cure

†172 Johnson Street, Maffra, Victoria.  
\*A11426 L.A.C. Jarman, J. B. c/o  
A.R.D.U., R.A.A.F., Woomera S., South  
Australia.

t.v.i. without first knowing how a television set works.

It must be emphasised, however, that television is making very rapid progress and even while these articles were awaiting publication, further important developments have been made. For this reason this series has been intentionally written to deal with only the basic principles which would not appreciably change, as television progressed, with the intention of helping the Ham to understand the more advanced television articles published frequently in current magazines.

Readers should take every opportunity to study this literature, and keep up to date with television's latest developments.

Photographs of the patterns produced by the various forms of interference are quite often published, and it is not a bad plan to keep these photos filed for future reference.

Remember, the Ham can't learn too much about television.

One final tip: If you must transmit during television programmes, use only a rig that has been previously tested, and proved free from interfering emissions. If you suspect your rig of causing t.v.i., play safe and use it only between television programmes, using the latter periods for maintenance, etc.

The same applies of course to any electrical appliance and as far as practicable to any motor vehicle that causes t.v.i. Next month our final instalment will deal with colour television. Meanwhile, put this article in a safe place for future reference, and keep those queries rolling in to VK3ADA.

— . . . —

## HOW TO USE DRY RECTIFIERS

(Continued from Page 3)

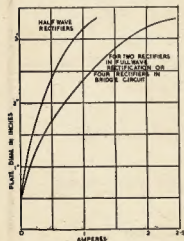


Fig. 8.

The theoretical side of dry rectification has been purposely neglected in this article. If the general interest for a treatment of the theory exists, the writer will always be pleased to deal with it in a further article. Furthermore, the writer will be glad to supply any further information on dry rectifiers, if possible.

## THE 8PO AERIAL

Here is a comment from G6CJ on the article by VK3BG on the 8PO aerial. We feel his finding and opinions on this matter are sufficiently illuminating to readers to warrant its inclusion in the magazine.

In the January, 1952, issue of "Amateur Radio," VK3BG has probably come as near as matters to a working specification of the 8PO aerial. The theory of it is quite simple, up to a point; all you have to do is to get equal currents in the correct relative phase in the two radiators, and it cannot fail.

It is the complex feeder adjustments necessary to produce this state of affairs coupled with the fact that people so seldom stick to working instructions, which have caused so much argument and so much disappointment.

The feed problem is always complex when two coupled aerials are in some arbitrary phase relation, and not zero or half-cycle. In the 8PO the phase is 3/8 cycle, and if you calculate the impedances of the two elements you find they are unequal, that is to say, the two wires do not contribute equally to the radiation. In theory they come to about 30 and 25 ohms; in practice, allowing for surroundings, they may have other values, and VK3BG's figure of 40 ohms may well be good enough.

However, if you reverse one feed, the impedances come to new values, over 100 ohms, and hence it is better to reverse direction by transferring the main line to the other end of the 1/8 wave jumper, rather than to reverse one of the branch lines which is what was so often done.

We have published a number of articles on it over here in England, and there has been a good deal of argument and many unsuccessful attempts to get one going. There is no doubt, however, that it is a powerful little unit, and if users will stick to some arrangement which has been made to work correctly, keeping to the right types and lengths of feeders, as for example, those offered by Roth Jones, VK3BG, they will be successful.

### TRADE NEWS

On the 1st May, 1952, Philips Electrical Industries of Australia Pty. Ltd. shortened the title of the Company. The correct name is now Philips Electrical Industries Pty. Ltd.

### BOOK REVIEW.

#### Philips' "Radio and Television Manual"

We have received from Philips Electrical Industries Pty. Ltd. a copy of their new publication, Philips' "Radio and Television Manual," price 5/6.

This manual of 776 pages contains just about everything the Serviceman, Engineer, Amateur and Student could possibly need in the way of information. It is divided into seven sections as follows: (1) Broadcast Reception—theory of the receivers; (2) Broadcast Receiver Technique—receivers and amplifiers in very great detail with special emphasis on the servicing angle, including power supplies of all types; (3)

## National Field Day, 1951, Results

This year twelve logs were received, although from a perusal of the logs it would appear that a considerably greater number took part and operated during the Field Day. It is to be hoped that next year the contest will be better supported, otherwise it seems hardly worth continuing.

The Open Section was won by VK2ASW/P, followed by Mr. Colinh, near Sydney. The operators were B. White VK2AAB, R. Gurr VK2SG, and D. Pollard VK2ASW. The transmitter ran 20 watts input to an 807, modulated by a Class B 6NT. Power was from three 400 volt generators.

VK4HR/P won the C.W. Section with 15 watts to an 827. Tibby was assisted by VK4RH and they operated on 7, 14, 23 and 50 Mc. from Maroochydore, Queensland.

The Phone Section was won by VK4KS/P, dx DX Contest fame, helped by W. Young VK4VA. A vibrator supplied the power to a 1625 modulated by a Class B 6NT.

Dipoles were most popular on all bands. Check logs were received from VK4AW and from D.E.R.S.-165 to whom our thanks go. Several enthusiastic complaints of the lack of co-operation from home stations who were busy chasing DX. Let's give the portable boys a hand next year.

OPEN SECTION				
Call Sign	Bands	Contacts	Bonus	Pts.
VK2ASW/P	- - -	2	65	70
VK2AAB/P	- - -	2	45	80
VK4HR/P	- - -	4	23	78
VK4KS/P	- - -	1	20	115
VK2AWN/P	- - -	1	16	25
VK3JO/P	- - -	2	8	-
C.W. SECTION				
Call Sign	Bands	Contacts	Bonus	Pts.
VK4HR/P	- - -	2	10	78
VK2AAB/P	- - -	2	10	50
VK4HR/P	- - -	1	11	25
PHONE SECTION				
Call Sign	Bands	Contacts	Bonus	Pts.
VK4KS/P	- - -	2	59	80
VK4TN/P	- - -	2	73	25
VK2AAB/P	- - -	2	25	25
VK3LN/P	- - -	2	25	117
VK3ALQ/P	- - -	2	36	—
VK2AWN/P	- - -	2	31	104
VK2RH/P	- - -	2	11	80

### CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

### URGENTLY REQUIRED

The Mobile Radio Unit of the Flying Doctor Service in Queensland urgently wish to obtain a manual of the AR7 Receiver. Their own was destroyed in a recent bush fire.

If anyone can help, would they air mail it to P.O. Georgetown, North Queensland, together with the cost.

Components, aeriels and transmission lines, valves and amplifiers, oscillators, ultra high frequencies, frequency modulation, pulse modulation, acoustics; (4) Service to Radio Receivers; (5) Technical Formulae, Tables and Charts; (6) Mathematical Formulae and Tables; (7) Valve Data.

It is impossible to adequately list all the subjects covered in the above sections, but the few listed will give some idea of the ground covered.

A television appendix of 60 pages gives the theory, and possible servicing troubles which will be encountered when television finally arrives.

All in all, this book is a must for everyone who has anything at all to do with radio, be it from the engineering, servicing or experimental angle.

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| ● TWEEDS                        | ● SPORTS TROUSERINGS             |
| ● WOOLLEN & WORSTED<br>COATINGS | ● WOOL TOPS                      |
| ● WORSTED YARNS                 |                                  |



# FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

The 326 Mc. band, which has been rather badly neglected, says for the effect, for a start, a group of enthusiastic VK5 operators in the persons of SM7, S8C and S8D have had established a record of 104 miles for a band, made on a portable expedition during Easter, 1952. Here is the story in the words of S8C (Callin Moore).

During the Easter break, SM7/S8C went portable to Cape Jervis, 288 ft., and S8C and associate member, Ralph Taylor, went to Kulparn, 600 ft. Both set-ups were running 7 and 200 Mc. The setup on St. Vincent's Gulf looks very good on paper, but owing to poor weather conditions (rain and wind), the job was a "push over". However, after testing for some 24 hours, S8C's 256 Mc. signal was finally heard at 9.30 a.m. on Sunday, 13th. A two-way contact was then established, S8C to SM7/S8C with signals running up to strength five, with heavy QSB. The distance was 166 miles, which we think is the Australian record for 256 Mc. SM7/S8C took 27th. S8C's Relic's Hill, 500 ft., and established contact with S8C, signals being very good S7; distance was then 84 miles. SM7/S8C also contacted S8D who was a new licensee. The distance being 33 miles.

Equipment used: SM7/S8C, 12 watts to p.p. VR1M, 10 ft. through 20 ft. antenna, 1000 ohm 16 element vertical beam; 905 sup. rec. receiver. S8C, 15 watts to 7153 mod. exc. 200 Mc. antenna, 10 ft. through 20 ft. antenna, 16 element vertical, switched down to receiver, 905 sup. rec. receiver.

## NOTES BY VK4QL

For the period that I have been compiling these notes, this month becomes the hardest to get enough to make this interesting. In this way, all bands have been flat, whether you wanted to work DX or VK. Reports from the DX side are nothing to write home about, and all goes about either. There has been a marked difference in some respects in what VK2 have been hearing or working against the rest. 7RK has been heard, but I think it is a different country, then he might do better.

The band survey, stations worked \* and times in G.M.T. (Z time) shows:-  
13.5 Mc. N. This band has been other than 7RK and myself, and we both agree that there has been nothing worth while going up there for. Except, of course, only VK and ZL were heard and poorly at that.

7 Mc.: This band seems to have passed its peak. The great VK activity that was heard over the last couple of months has died, which is a fair indication of the way the band has gone off. The mornings produced very little in the way of DX. VKQ6B, operating from the Trobriands, has given many a new country. Bob agrees with me, and as so many found during the war, that the YLs of the Trobriands are the prettiest of those to be found in the Pacific Islands. STG, using a vee beam, has been hearing South Americans round 6000Z, but has many. 4XJ has been heard by the Europeans some mornings, but is the wrong time of the day for him to get on the air. SMZ has been doing alright with his Type 3, but has been working 7RK. 7RK, 7K16, 7QHJP, VU2AG, 3QZ/S. Over the last 18 months this QRP rig has worked 163 Ws on this band, has to be one of the best in the European. 7RK finds the band fair in the evening for North America, which is in direct contrast to up here. I tried to get through to OAED on 7 Mc. but neither Ray or I heard him, and OAED did not hear me. My others on this band were only V81CO\*, 5A3TT, VQ4BP, VQ1CO.

11 Mc.: This band has been almost useless up here, but according to 9FN, it's going OK up in Port Moresby, so maybe the poor conditions in the tropics are in VK2 have drifted south. The Anzac week-end the band was greatly improved. Whether it was a fluke in the past remains to be seen, but comments on the band indicated a general improvement had occurred. IDG inactive due to doctor's orders, makes on occasionally, and has been quite relieved when told he had not been missing out on much. 3CX still able to add an occasional new one, this time B5AA\*, 2400 2434P, 2434P, VPSA\*. Heard a station call ODSAB and give his QTH as Beirut, Box 262. Alan said conditions have improved greatly. 4XJ finds the Ws appearing round

### SOUTH AUSTRALIA

Two excellent pieces of news in the v.h.f. world for this month are the following. One hundred and five miles covered on 288 Mc. by S8C and S8D from Cape Jervis to Kulparn on Easter Sunday. The other was a record on the Ross Hull Contest. Congrats to the above three for outstanding achievements.

The VK5 Intrastate Contest has finished and logs are being checked. As a preview, it looks like OK S8D being the winner. The Royal Adelaide Exhibition has closed and S8W dismantled. Special thanks must be given to all the operators who gave their time and especially to S8L, S8D and S8W who acted as links on 50 Mc., relaying all contacts to overcome the local interferences at the Exhibition, another advert for the v.h.f. gang. With the winter setting in, most chaps are taking the opportunity to overhaul their gear and prepare for the next DX season.—VK3KJL.

### WESTERN AUSTRALIA

50 Mc.—8RK and 6GB are reliable. Don 8RK has a new final on the way, a pair of 8Ms and has had drive on them. 6TR, a new licensee is a welcome addition to the 6 Mc. fraternity and uses a pair of 6Ms in the final. Unfortunately he hasn't quite enough modulation as yet to do them in. 6GB has been thought to be a firm fixture on 7 Mc. branched out on 28 recently and before the shock had died away opened fire on 50! Nice work, Lou. 8RK and 6TR are "beams" and are named 'em' who plotted up the skull-duggery neces-

9700Z. He lists K3CWX (Truk), KV4AA, VYMAK, K3CWX (Caroline), VK1BS and the usual Europeans.

SH went to pen once more, and did not like the band much. He lists K2SAA\*, VPRC\*, JAO1\*, VQ1CB, Z3W8W, K1K7\*, KQ4AF, VK1RG\*, PQ4AF, VQ3BM, 5A7TY, E8AAW, E8AJA, F8ADK, YN1AA. 7RK heard a VK3 heard a few KVs, but could not find the trace of FRID. He hears the Pacific and Adams quite well at night whereas up here the band has died. I wonder if as the South Africans are on 21 Mc. as he has not heard any (South Africa has had the use of 21 Mc. for some time). 7RK lists VPSA\*, VYVTR and K2CAA. He calls every UA station he is able to see if the Iron Curtain can be lifted. As well as the opening on 25th, the Europeans were heard one after another, the Ws when the band changed rapidly. By 2000Z, Europeans were heard, then the Ws appeared, followed at 2115Z by the Pacific stations. My listing: FRAB\* (who does not QSL), VQ4CB\*, VK1NG\*, K8HFA/K8B\*, K8AA\*, SBY has worked 187 countries, but has not got one new one for five months.

31 Mc.: Watch this space next month. Unfortunately I will be away for the grand opening on the 1st.

38 Mc.: Two of the gang found this band produce results. STG lists Ws, VKQ6V, VP8SD, HP8SL, HC1KW, HC1BS, ZS, VU, PF, XE and ML. Beckton's can hear five continents any day with his 4 el. beam. He also heard quite a lot of short skip. 4XJ has listed ZL, VK, KCH, W, KWH\*, VE, JA, K8AR\*, HC1FS\*, HP1FO, K2CAA. Used a beam on this band. 7RK and myself found the band a dead loss.

The QSL situation has not brought much to the fore either. 3CX has them from EK1CW, GZ8RV, VP2MD, FT2TP, OQ5VF. SHI has K8BAW, E8AAM, E8AAR, CH7CH, K8JAG, Y810 and 4Q1. K2AA\*, Y132Z, FT2TP, H81UN, Z8JJP, Z8JAC, ST8GL, OQ5VN. The "gen" section has had it also. Our wishes regarding the 21 Mc. band have been fulfilled as from May it looks as though we can expect little use from the 7 Mc. band in the mornings from now on. The other morning I counted 18 broadcasts between 7000 and 7200 Kc. and one on 7010 and 7028 Kc. VK1NG expects to have a 50 Mc. TX operating by the time you read this and will look for reception reports on 7 and 14.

Within the next few months there is a possibility I may have to discontinue conducting these notes for a period. But I have kindly agreed to carry on with them during that period. I will let all my regular contributors know by letter when to drop their reports to Ray instead of me.

● The thought for the month: "Good hunting on the new 21 Mc. band."

sary to bring GLU on air. Roger 8RK is shifting gear (not QTH) and has not been heard too often. His "old faithful" 3 element beam has had to receive a shot of Scotch—scotch tape—to hold it together.

Don S8W and Blake 6GB have been on holidays, the former to Albany, Manjimup and Perth, Blake to Perth (and to 6BO's place, inevitably). Frank 8FC not heard often. He has apparently a high noise level. You're not alone. 6BO's 8RK, 8C3 and 8RO all complain of the same trouble. Wally 6LW also heard on the band sometimes. 6G1H's description was "Sporadic Wall 'n' Wood" of Jack's saying of note—he claims to have "centimetric modulations with dipoles." Role 6BO endeavouring set a portable TX going for two hand operation (7 and 50 Mc.). Does a 6G3 final and results so far quite pleasing.

144 Mc.—Wally 6AG and Jack 6OR are still good regulars at 8.30 Sunday evenings. 6J8 and 6GB also heard. Also worked 6DW, 6G3 and 6BO had checks on 144 Mc. converters recently and honours are about in order of this band which is very f.b. Also a new TX on the way.

No news at all about 288 Mc. in VK5 this month, chaps.—6BO and 6WZ.

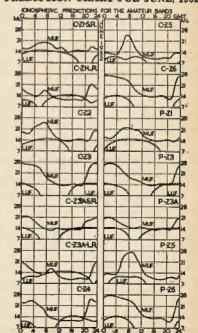
### DX C.C. LISTING

Call	No. Ctr.	Call	No. Ctr.
VK2EE	10 163	VK6KW	4 149
VK4UD	1 188	VK1LN	11 141
VK6BE	1 185	VK3YK	10 143
VK1BZ	3 184	VK6RD	6 138
VK4RS	9 183	VK6JW	7 133
VK6RU	3 149	VK4WJ	17 132

Call	No. Ctr.	Call	No. Ctr.
VK1BZ	6 200	VK6SA	28 150
VK1FH	15 177	VK4FJ	29 150
VK6BE	10 143	VK3YK	10 143
VK1BZ	9 187	VK3QL	6 143
VK6BE	9 183	VK6KX	23 140
VK1CN	1 131	VK6JW	17 132

Call	No. Ctr.	Call	No. Ctr.
VK1BZ	4 213	VK2DI	3 170
VK4RH	7 200	VK6KX	1 167
VK6RU	6 182	VK4EL	9 167
VK1BZ	13 189	VK4KS	24 167
VK4FJ	32 173	VK6KW	13 168
VK6RG	3 171	VK4DO	16 167

### PREDICTION CHART FOR JUNE, 1952



\* Ft./Lt. F. T. Hine, No. 10 (G.R.) Squadron, R.A.A.F., Townsville, Queensland.

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# FEDERAL, QSL, and DIVISIONAL NOTES

Federal President: G. GLOVEK (VFRAG); Federal Secretary: G. M. HULL (VKSES); Box 211W, G.P.O., Melbourne.

## NEW SOUTH WALES

President: John Moyle, VK3JU.  
Secretary: David H. Duff (VK3KO), Box 1724  
S.C.S.O., Sydney.

Meeting Night: Fourth Friday of each month at  
Scienc House, Corner Gloucester and Essex  
Sts., Sydney.

Divisional Sub-Editor: Harry Powell, VK3AYP,  
9 Russell Avenue, Wahroona.

Zone Correspondents: North Coast and Table-lands: Noel Hanson, VK2AHM, Ryan Ave., West Kempsey, Newcastle; Ron McD Stuart, VK2ASJ, 88 Dunbar St., Stockton; Goolfields and Lakes: Harry Hawkins, VK3VL, 277 Comfort Ave., Cessnock; Western: W. H. Butt, VK3WH, Camblowia, Forbes; South Coast and Southern: Roy Rayner, VK3DO, 41 Fethi St., Yass; Eastern Suburbs: Don Knack, VK3NO, 42 Yanko Ave., Waverley Northern Suburbs: Harry Powell, VK3AYP, Russell Ave., Wahroona; St. George's: Chas. Coyle, VK3YK, 84 Carlton Cres., Kogarah Bay.

## TASMANIA

President: G. Dennis, VK3TF.  
Secretary: L. R. Bradshaw, VK3KX.

## FEDERAL

### RELEASE OF 31 Mc. BAND

Following on the Editorial in the May issue of "Amateur Radio," all Amateurs have now been officially informed of the changes in the frequency allocations including the implementation of the new 31-31.45 Mc. band. At one minute past midnight, the 31 Mc. band many VK stations were heard in QSO on the new band. Current conditions on all bands have been assuming at an all-time low which rather gave a bad start to the new band. However, it is yet early to comment on the possibilities of this part of the frequency spectrum until such time as more Amateurs become active on the band, and other overseas administrations implement the frequency allocation. During the preliminary discussions with the Department on the release of the 31 Mc. band, Federal Executive requested that the authorised users of emissions in the various bands be reviewed.

All Amateurs have now been advised of the wider scope in types of emissions permitted in the various bands which we feel will open up yet wider fields for experimentation.

### 1955 FEDERAL CONVENTION

Over the Easter recess fourteen official delegates and observers representing every Division of the Wireless Institute in each State of the Commonwealth—sat in conference at the 1955 Federal Convention held this year in Sydney.

By courtesy of the directors of Associated Newspapers Pty. Ltd. and the Editor of "Radio & Hobbies," conference room facilities were made available for the Convention in quiet and pleasant surroundings where delegates could concentrate on the details involved in some twenty-three agenda items: general business items, and a review of policy matters arising from previous Conventions.

Delegate Vaughan Wilson, VK3VW, and observer, John Moyle, VK3JU, who represented the New South Wales Division in the discussions evolving from the agenda. Members of Federal Executive and some of the Divisional representatives were later entertained at the private residences of Vaughan and John where the hospitality was both spontaneous and sincere. An excellent display of equipment was demonstrated in operation at both stations, in addition to which a pleasant hour of high fidelity reproduction from micro-groove discs was enjoyed at John's home.

Charlie White—delegate from Victoria—with Len Jackson as observer, accredited themselves well at their Convention, and returned to their Division happy with the knowledge that they had carried out the wishes of the members in their Division.

Arthur Burton, VK4VE, delegate from Queensland, not satisfied with the job he was doing for his Division during the first two days of the Convention, really "got down to it" on the third and fourth days after Ron Hugo ban away out west demonstrated how to energise the human mind and body by hypnosis and mesmerism. All those who had the opportunity to witness Ron at work in this intriguing study of the control of the human mind, voted full marks to Arthur for the sporting fashion in

Administrative Secretary: Mrs. J. Hurley, Law Court Chambers, 191 Queen St., Melbourne.  
Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.  
Zone Correspondents: Western: C. C. Waring, VK3VW, 12 Skene St., Stawell, South Western: E. O'Rourke, VK3AKR, Killgrew, Western: North Eastern: T. K. Tennant, VK3JC, 38 Wilson Ave., Tatura; Far North West: M. Folie, VK3KZ, 101 Lendon Ave., Mildura; Eastern: H. O. Kellar, VK3AHK, Tinnambury; North Western: C. Case, VK3ACJ, Camugnia Ave., Birchcop.

## VICTORIA

President: V. Jeffs, VK4VJ.  
Secretary: J. P. Pickles, VK4FP, Box 628J, G.P.O., Brisbane.

Meeting Night: Third Friday in each month at the I.R.E. Rooms, Wickham St., Valley.  
Divisional Sub-Editor: A. Guildford, VK4AF, 36 Bramston Tce., Hurlston, Brisbane.

## SOUTH AUSTRALIA

President: E. A. Barber, VK3MD.  
Secretary: G. M. Bowen, VK3KU, Box 1234K, G.P.O., Adelaide.

## SILENT KEY

It is with deep regret that we record the passing of:—

VK3ZJ—Jim Salmon, 28/4/52.

which he co-operated as the "subject" in letting Ron demonstrate the art of hypnotism to others.

The delegate from South Australia—John Bulling, VK3KX—ably assisted by his observer, Jack Coulter, VK3JD, did some heavy debating on behalf of their Division. John, quietly spoken but forceful, was first introduced to Convention proceedings last year when he represented his Division as observer. Jack, vested with the v.h.f. responsibilities in his Division, made short work of the agenda items dealing with his pet subject.

Ron Hugo, VK4KW, admirably represented the Western Australian Division at his first Convention. Any similarity between the voting procedure adopted by VK4 and VK6 is purely coincidental and has no relationship with the hypnotic spell under which Arthur fell at the mere swing of a key-chain! Kind you, all this hypnotism business was conducted during off-convention-hours and there were plenty of witnesses to see the Ron and Arthur couldn't pull off any coup between them.



The 22nd Annual Federal Convention of the Wireless Institute of Australia in session in Sydney during the Easter holidays. Left to right: Miss Jupp (Official Stenographer), Max 3Z2, George 3DL, Vaughan 3VW, John 3JU, Charlie 3AYP, Len Jackson, Arthur 4VE, John 3EX, Jack 3JD, Ron 3KW, Bob 3OM, and George 3AG.

Meeting Night: Second Tuesday of each month at 17 Weymouth St., Adelaide.  
Divisional Sub-Editor: W. W. Parsons, VK3PR, 10 Victoria Avenue, Rose Park.

## WESTERN AUSTRALIA

President: J. Campbell-Watson, VK3JW.  
Secretary: H. B. Lang, Box N192, G.P.O., Perth, W.A.

Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.  
Meeting Night: Second Monday of each month.  
Divisional Sub-Editor: R. H. Atkinson, VK3WZ, Box 127, Geraldton, W.A.

## TASMANIA

President: R. O'May, VK3KOM.  
Secretary: F. J. Evans, VK3TF, Box 371R, G.P.O., Hobart.

Meeting Night: First Thursday of each month at the Photographic Society's Rooms, 183 Liverpool Street, Hobart.

Divisional Sub-Editor: V. Dore, VK3JD.  
Zone Correspondents: Northern: C. A. Cullinan, VK3KW, 13 Montrose Place, Launceston; North Western: R. E. Wilson, 4 Menai St., Burnie, Tasmania.

The Tasmanian delegate—Bob O'May, VK3KOM—needs no introduction. Bob did a good job, his only complaint being that he was usually the last speaker and by the time his turn came everyone else had stolen his thunder. Despite late hours and tiring work, Bob always managed to awaken the delegates at the boarding house so they wouldn't miss breakfast and the 8.35 a.m. ferry across the harbour. The only thing about that was the time—6 o'clock!

All in all the Convention was a success and the States had the important opportunity of again getting together to discuss matters concerning Amateurs and Amateur Radio in Australia.

Mention should be made of those who found time to visit the Convention during its sessions. Dave 2EO, Harry 3AYP, Leo 2AC, Wal 2TI, and Ray 3RA, Chairman and Deputy Chairman respectively of the Federal Control Committee; Lionel 2SC, President of the Hunter Branch of the N.S.W. Division; Arlie 3BE, PK4DA, of Sumatra, now on his way to the U.S.A.; Jim 3YC, who attended every session of the Convention and entertained delegates and members of Federal Executive at his home, Morrie 3AAN, and Lloyd 3CW.

Space does not permit of relating all the various interesting sidelights of this, the first Convention to be held in New South Wales, and the first Convention to be held away from Melbourne for many years. Suffice it to say that it was a success, and many matters of policy and interest to Amateur Radio were discussed in a manner that could only be done over the conference table.



W.I.A. 22nd Annual Federal Convention

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## FEDERAL QSL BUREAU

RAY JONES, VK8J, MANAGER

The QSL Bureau for Luxembourg is located as follows: Réseau Luxembourgeois, 60 rue Trévint, Luxembourg.

Pleaded to make acquaintance with Bill Storey, VK8BS, who passed through Melbourne on the way back from the Hawaiian Islands at the end of Bill, and looked forward to carried the full complement of hisare adorned, expects to resume on the air shortly. He will call VK8J, Reprints and the Macquarie Island include VK8EM Eric Macklin, ex-telegraphist of Melbourne, Rob Gurr VK8IO and VK8IK and VK8IR Rob Arnold. Their journey at the island extends until April, 1963. Bill VK8BS has 1300 cards printed and will make an attack on the back log shortly after his arrival in Sydney.

A new Radio Association has been formed among Amateurs in Holland. The new society, styled "Vereniging Van Radio Zender Amateurs" which means Dutch Society of Radio Transmitters Amateurs' has its headquarters at Box 180 Groningen, Holland. The President is PA0JJK and the Secretary is PA0GVN. The reason for the formation of the new body, which is restricted exclusively to transmitting Amateurs, is, according to the President, the existing society V.R.O.N. (composed of the pre-war transmitting society N.V.R. and the pre-war S.W.L. society V.U.K.A.), has turned out to be a society of radio amateurs professionals of which transmitting Amateurs form only 15% of the total membership, and the remaining 85% are radio amateurs by individuals who are not Amateurs." The V.R.Z. also wishes that the N.V.R. will only send out cards for members and not for individuals and then only against payment." The new body will handle cards for members and non-members alike and the QSL Bureau address is as follows.

VK3AFT, Kevin Brady, of Wollongong, N.S.W., is currently undertaking a radio course at the U.S. Maritime Technical College.

Norm Wadding, ZM8AR/ZL1PT, in a short note accompanying QSLs, says he has over 1,000 cards to send out for countries and territories and actually sweating over the job.

VK4AAK says VK3AMA to note that his picture will appear in the May or June issue of "CQ".

Related notice of a QRP Contest conducted between 6500-3300 GM T, on May 4, by the U.S. Maritime Technical College. The contest was arranged to show what could be accomplished with a maximum of 10 watts. Any VK who participated in the contest and who has a contest is requested to send his report to the usual R.F.F. address, viz. 72, rue Marceau a Marseille, France.

To celebrate the 25th year of its existence the Danish Society D.S.R. is conducting Jubilee celebrations, with various contests during May. They have also decided to issue a certificate styled the "OZ Green Cross Award". The award is open to all Amateurs in the world, and is based on contacts with most or all of the 25 districts into which Denmark is divided. Contacts since 1st August, 1947, are recognised and one point is given for a contact on 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 11.0, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 12.0, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 13.0, 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14.0, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16.0, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 17.0, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7, 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34.4, 34.5, 34.6, 34.7, 34.8, 34.9, 35.0, 35.1, 35.2, 35.3, 35.4, 35.5, 35.6, 35.7, 35.8, 35.9, 36.0, 36.1, 36.2, 36.3, 36.4, 36.5, 36.6, 36.7, 36.8, 36.9, 37.0, 37.1, 37.2, 37.3, 37.4, 37.5, 37.6, 37.7, 37.8, 37.9, 38.0, 38.1, 38.2, 38.3, 38.4, 38.5, 38.6, 38.7, 38.8, 38.9, 39.0, 39.1, 39.2, 39.3, 39.4, 39.5, 39.6, 39.7, 39.8, 39.9, 40.0, 40.1, 40.2, 40.3, 40.4, 40.5, 40.6, 40.7, 40.8, 40.9, 41.0, 41.1, 41.2, 41.3, 41.4, 41.5, 41.6, 41.7, 41.8, 41.9, 42.0, 42.1, 42.2, 42.3, 42.4, 42.5, 42.6, 42.7, 42.8, 42.9, 43.0, 43.1, 43.2, 43.3, 43.4, 43.5, 43.6, 43.7, 43.8, 43.9, 44.0, 44.1, 44.2, 44.3, 44.4, 44.5, 44.6, 44.7, 44.8, 44.9, 45.0, 45.1, 45.2, 45.3, 45.4, 45.5, 45.6, 45.7, 45.8, 45.9, 46.0, 46.1, 46.2, 46.3, 46.4, 46.5, 46.6, 46.7, 46.8, 46.9, 47.0, 47.1, 47.2, 47.3, 47.4, 47.5, 47.6, 47.7, 47.8, 47.9, 48.0, 48.1, 48.2, 48.3, 48.4, 48.5, 48.6, 48.7, 48.8, 48.9, 49.0, 49.1, 49.2, 49.3, 49.4, 49.5, 49.6, 49.7, 49.8, 49.9, 50.0, 50.1, 50.2, 50.3, 50.4, 50.5, 50.6, 50.7, 50.8, 50.9, 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172.2, 172.3, 172.4, 172.5, 172.6, 172.7, 172.8, 172.9, 173.0, 173.1, 173.2, 173.3, 173.4, 173.5, 173.6, 173.7, 173.8, 173.9, 174.0, 174.1, 174.2, 174.3, 174.4, 174.5, 174.6, 174.7, 174.8, 174.9, 175.0, 175.1, 175.2, 175.3, 175.4, 175.5, 175.6, 175.7, 175.8, 175.9, 176.0, 176.1, 176.2, 176.3, 176.4, 176.5, 176.6, 176.7, 176.8, 176.9, 177.0, 177.1, 177.2, 177.3, 177.4, 177.5, 177.6, 177.7, 177.8, 177.9, 178.0, 178.1, 178.

Event of the century—Erie 2FF came on 40 to QSO Urunga boys; i.e. signal to! Edgar 2MR still a 40 mx regular. Harry 2AFA now using a 40 mx folded dipole with excellent results. 2BZ really keen these days and Dave active on all bands. The Barrington effort has revived interest in 2 mx. 2X3Y quite active on 144 and Neil busy on ARKY and SC152 for 2.54. 2ZD converted to ARKY. 2ZD and Bill putting it up. Bill 2PI is building a parallel line rig for 144. Very pleased.



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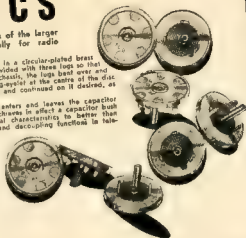
This type of "Micadisc," a smaller version of the larger transmitting types, is designed especially for radio receiver application.

They are of stacked foil construction, contained in a circular-plated brass case, which forms one terminal. The case is provided with three lugs so that the capacitor may be mounted directly on the chassis, the lugs bent over and soldered. The other terminal is formed by a tag-wire at the centre of the disc through which a lead may be passed, soldered and continued on if desired, as depicted in the illustration at 'a'.

Due to the peculiar construction, the current enters and leaves the capacitor radially. With the method of mounting, this achieves in effect a capacitor bush with extremely low inductance and operational characteristics far better than 200 Mfcs, which is ideally suited for bypass and decoupling functions in television and other U.H.F. applications.



Standard capacity values: 250, 300, 500 p.f.  
Capacity tolerance:  
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(b)  $\pm 20\%$   
Working voltage: 250  
at 75° C.  
Test voltage: 1000 D.C.

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